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Electrocatalytic oxidation of ethanol on graphite electrodes coated with a nafion film with incorporated particles of ruthenium or its complexes

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Abstract

The electrochemical behavior of ethanol on graphite electrodes with a Nafion film containing ruthenium as a crystalline metal deposit or a metal complex was compared. It was found that, in the oxidation of ethanol, aqua and phenanthroline complexes of ruthenium(III) incorporated in the Nafion film exhibit catalytic activity. A larger catalytic effect was observed at an electrode containing the Ru(phen) 3 3+ complex. A procedure is proposed for the voltammetric determination of ethanol at this electrode. © 2005 Pleiades Publishing, Inc.

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